DOCUMENT RESUME

ED 135 844 TM 006 074

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TITLE An Evaluation of Curriculum Planning Processes and Products.
PUB DATE [Apr 77]
NOTE 27p.; Paper presented at the Annual Meeting of the American Educational Research Association (61st, New York, New York, April 4-8, 1977)

EDRS PRICE MF-$0.83 HC-$2.06 Plus Postage.
DESCRIPTORS *Committees; Curriculum Design; *Curriculum Development; *Curriculum Evaluation; *Curriculum Planning; Elementary Secondary Education; *Evaluation; Measurement Techniques; Models; School Districts; Statistical Analysis; Systems Analysis; Teacher Administrator Relationship; Teacher Attitudes; Teacher Participation

ABSTRACT

The study was an evaluation of the planning processes and the products of a curriculum engineering system in a school district. The primary objective was to determine the relationship between the quality of group planning effort exerted by curriculum committees and the quality of curriculum products produced by them. A systems analysis model was constructed in order to provide a theoretical framework for determining the multiple effects of selected group process variables upon the three group product variables of written curriculum products, changed teacher attitudes, and member satisfaction. Both qualitative and quantitative research methods were employed in the study. (Author)

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ED135844

AN EVALUATION OF CURRICULUM PLANNING PROCESSES AND PRODUCTS

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AERA Session #28.09

TM006 074

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ABSTRACT

An Evaluation of Curriculum Planning Processes and Products (EVA)

MAUD C. HALL, Northwestern University

The study was an evaluation of the planning processes and the products of a curriculum engineering system in a school district. The primary objective was to determine the relationship between the quality of group planning effort exerted by curriculum committees and the quality of curriculum products produced by them. A systems analysis model was constructed in order to provide a theoretical framework for determining the multiple effects of selected group process variables upon the three group product variables of written curriculum products, changed teacher attitudes, and member satisfaction. Both qualitative and quantitative research methods were employed in the study.

AN EVALUATION OF CURRICULUM PLANNING PROCESSES AND PRODUCTS

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I. PROBLEM

This report is based on a study designed to evaluate the planning processes and the curriculum products of a particular curriculum engineering system in a school district. The curriculum engineering system evaluated in this study was first installed in the school district in the fall of 1970. The two primary functions to which the curriculum system addressed itself were curriculum planning and curriculum implementation. Evaluation and re-planning were continuous processes, woven into the planning and implementation functions of the system. A series of longitudinal studies on the effects of teacher and administrator participation in the curriculum system of this school district have been undertaken annually, since its installation. The present study was an outgrowth of these studies, and attempted to provide qualitative data to supplement these quantitative studies, and to determine what may have accounted for an observed drop in the attitudinal measures of the participants in the 1974-75 school year from previous years. The emphasis of the study was upon describing <u>what</u> kind of curriculum work was undertaken by the committees studied, <u>how</u> this work was accomplished, and the type of products or <u>output</u> that resulted from this effort.

The primary objective of this study was to determine the relationship between the quality of group processes and planning effort exerted by the curriculum planning committees and the quality of curriculum products produced by them. Related objectives dealt with evaluation of: 1) differences in the quality of group processes exhibited by the committees; 2) differences in the quality of the written products produced by them; 3) differences between the curriculum attitudes of those teachers who participated and those who did not participate on curriculum planning committees during the school year; and 4) growth in teacher attitude toward curriculum use and planning as a result of committee participation.

This paper was presented at the annual meeting of the American Educational Research Association in New York, April 1977.

Definition of Terms

Certain terms need to be defined. Some of the terms are important for the theory content in this paper, and others are necessary to explain the model developed to investigate the relationships among the variables in this study.

Curriculum system refers to the system of schooling which is used for both decision making and action in relation to curriculum functions.

Curriculum engineering refers to all of the processes and activities necessary to maintain and improve a school curriculum system: curriculum planning, implementation, evaluation and replanning.

Curriculum appraisal model is used in this report to refer to a systems analysis model for evaluating and studying the relationship among the variables found in a curriculum system. The model consists of three phases: system inputs; content and processes for system maintenance; and system outputs. Variables studied in the curriculum system were classified according to one of these three phases.

Curriculum committee refers specifically to one of the eleven formally organized curriculum area study groups of the school district studied. These groups met exclusively during the 1974-75 school year.

Participation in curriculum planning refers to those teachers and administrators who voluntarily chose to serve, and who actively participated, on one of the eleven curriculum committees organized for 1974-75.

Written curriculum products are the particular written outputs produced by each curriculum committee; includes anything from reports, minutes of meetings, listings of curriculum objectives, criteria, and recommendations, to a curriculum document or educational plan.

Curriculum planning effort refers to the group processes and operations perceived to have been demonstrated by the various curriculum committees during the course of their planning meetings for the 1974-75 school year; this effort corresponds to the content and process phase of the curriculum system appraisal model. These perceived group processes were measured by rating the interview data collected from all of the committee participants.

Data Source and Background Information

The data source was a K-8 school district in a suburban area of Chicago, Illinois. The district serves approximately four thousand students. There

are ten schools in the district with a staff of five principals and approximately 141 classroom and special area teachers.

Participants for the eleven curriculum planning committees meeting in 1974-75 were voluntarily recruited through a district-wide survey issued by the Assistant Superintendent for Curriculum and Instruction in the fall of 1974. This voluntary system of participation in curriculum planning in 1974 marked a reorganization of the district's curriculum system. Previously all teachers in the district were required to participate in curriculum planning, either on a horizontal (grade level) or vertical (subject area) committee. The major impetus for this reorganization stemmed from a negotiated agreement between the Board of Education and the Teacher Education Association in July 1974 which disbanded the former curriculum committee structure. Since a slide in a negative direction was observed in the attitudinal measures of teachers toward curriculum planning in 1975, the present study was undertaken ex post facto (in the spring of 1975) in order to determine whether this reorganization, or some other factor(s) contibuted to this drop in attitudinal measures.

II. DESIGN AND PROCEDURES

In order to describe and evaluate the group planning effort and the curriculum products of the 1974-75 curriculum engineering system within a theoretical framework, a systems analysis model was designed. A curriculum system appraisal model was constructed in order to identify, classify, and determine the multiple effects of selected group process variables upon three group product variables. Peripherally ivestigated were the effects of selected system input variables upon group process and group productivity. The following is a description of the components of the three phases of the model.

The Model

The curriculum appraisal model was adapted from Stogdill's[1] theoretical system of group achievement and Beauchamp's[2] curriculum systems model. (See Appendix A and B for these models.) The basic model for the appraisal of a curriculum system, adapted from these two theoretical systems is shown in Figure 1; the complete model with all of its components is presented in Figure 2.

The system input variables of the model consisted of: a) all of the information available to the curriculum planning committees that provided them with a direction and framework for their work; and b) the administrative

Figure 1

Basic Model for the Appraisal of a Curriculum System

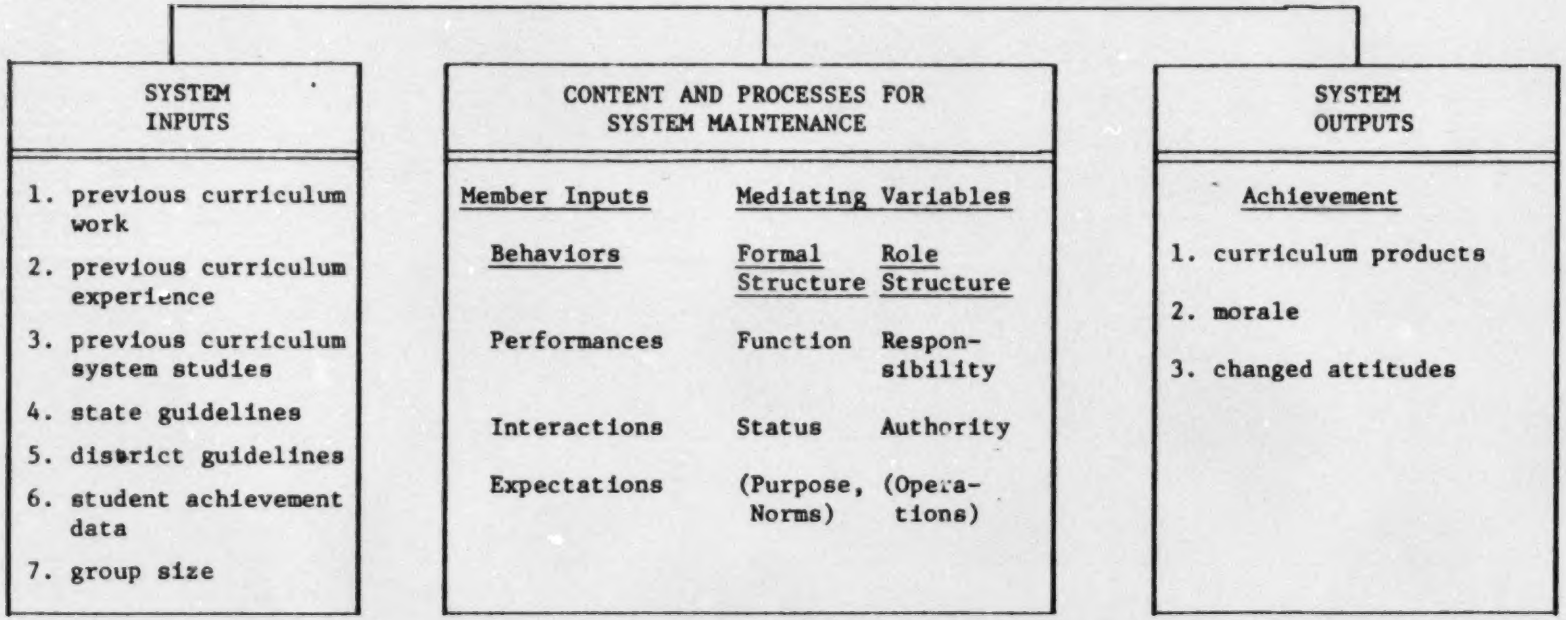
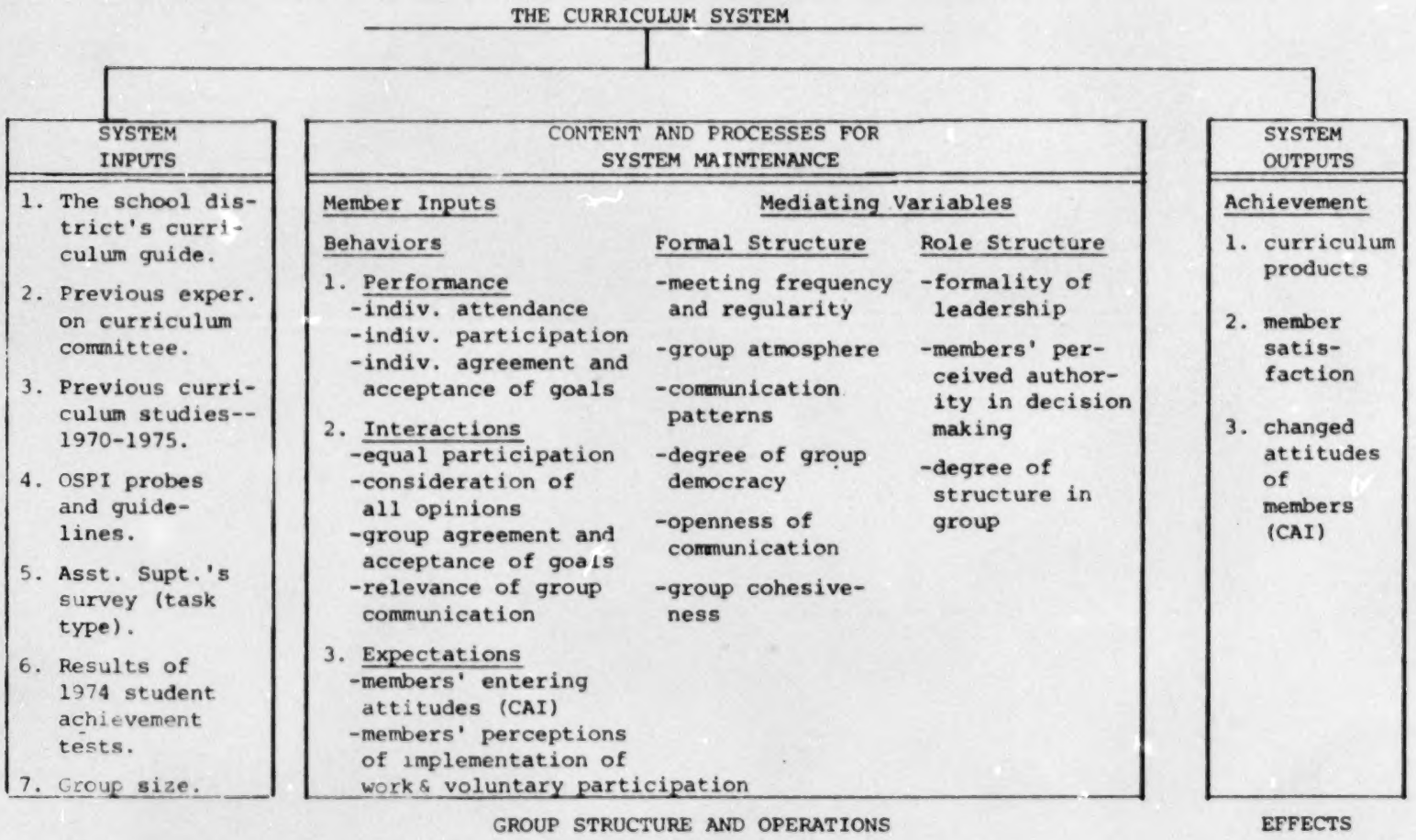


Figure 2

A Model for the Appraisal of the Curriculum System



structure imposed upon the committees for their work. Although these variables were identified and classified, their influence upon group process and group product was only peripherally studied and described. Seven categories were deemed as relevant to the operations of the committees: 1) previous curriculum work in the school district; 2) previous participation on a curriculum planning committee; 3) previous annual studies undertaken on the curriculum system; 4) state guidelines on district self-evaluation of curriculum areas; 5) district office guidelines on proposed objectives for the 1974-75 curriculum committees; 6) 1974 student achievement data from standardized tests; and 7) the size of the curriculum committees.

The variables in the content and processes for system maintenance phase of the model consisted of all of the processes, behaviors, interactions, and activities that produced the decisions and the the products of each committee. Two types of process variables were identified: 1) individual behavior variables (member inputs), consisting of performances, interactions, and expectations; and 2) group interaction variables (mediating variables), consisting of the formal group structure and the role structure taken by group members. The variables in this phase of the model were used to determine and evaluate the quality of group process exhibited by each committee.

The system output variables of the model are defined as group achievement, the end effect of the personal and interpersonal behaviors exhibited through group structure and operations. The major output produced by each committee was some type of written curriculum product; these products were evaluated as to their quality. Other outputs also produced by the curriculum system were: 1) the degree of satisfaction expressed by group members as to the processes and products of their committee; and 2) the changed attitudes of group members as a result of their participation on a curriculum committee during the 1974-75 school year. These outputs were also evaluated.

The Sample

The seventy nine teachers and administrators who voluntarily served on the eleven curriculum area committees during the 1974-75 school year were considered the sample of curriculum committee members. Those teachers who did not choose to participate on a curriculum committee in 1974-75 served as the comparison group for the purpose of comparing the attitudes of teacher committee participants and non-participants toward curriculum issues.

Data and Instruments

Both process and product data were collected. Process data were obtained from personal interviews with all of the committee members; a schedule interview questionnaire was constructed and utilized in conducting these interviews. Product data were collected from the written reports and documents produced by the committees. Data on two "intangible" products of curriculum planning, member satisfaction, and changed teacher attitude, were also collected and evaluated. Teacher attitude toward curriculum use and planning was measured by the Curriculum Attitude Inventory (CAI).[3] Member satisfaction with curriculum committee participation was determined from the responses to this question obtained in the interviews.

Both qualitative and quantitative research procedures were utilized to analyze and evaluate the problems of this study. The quality of group processes exhibited by each committee was determined by rating the interview data with a Process Scale. The Process Scale was constructed so as to rate those aspects of group process and operations delineated under the "Content and Processes" phase of the curriculum appraisal model (see Figure 2). The ratings obtained from using the Process Scale were classified into one of three categories: excellent, average, or poor group process. Content analysis procedures were utilized to determine the quality of the written curriculum products produced by each committee. A Product Scale was constructed from the content analysis categories, and the products of each committee were rated and categorized as to quality. The relationship between the quality of group process and the quality of written group products was determined through correlation procedures. Analysis of variance and analysis of covariance procedures were utilized to test differences between the curriculum attitudes of committee participants and non-participants both before and after the 1974-75 school year. Any growth in teacher attitude toward curriculum issues, as a result of curriculum planning participation in 1974-75, was observed, and the significance of such growth was determined through t-tests.

In addition to the statistical procedures utilized in analyzing and evaluating the problems of this study, a descriptive analysis and interpretation of the group processes and group products of each committee was presented. Also discussed were the apparent influences of the seven system input variables upon the group processes and operations of the curriculum committees.

III. RESULTS AND DISCUSSION

Total group process scores and the rankings of each committee obtained from the Process Scale are shown in Table 1. Table 2 summarizes the quality of the group processes and operations perceived to be exhibited by each committee in terms of the three categories of excellent, average, and poor. As can be seen from Table 2, only two of the eleven committees studied were evaluated as excellent in group process. These two committees were rated as excellent on all of the sub-categories of the rating scale. Specifically, these committees tended to be characterized by democratic leadership, high member participation, open communication, and an informal yet structured group atmosphere. On the other hand, the three committees exhibiting poor or unacceptable group processes were described by their members as having seldom held meetings, and as being almost entirely "leader-centered".

The total product score of each committee and the ranking of the committees by their products (obtained by rating all their written curriculum products with the Product Scale) are shown in Table 3. A categorization of each committee as to the quality of the written curriculum products produced by them appears in Table 4. The written curriculum products produced by the five committees categorized as "excellent" consisted of output rated very highly on the following sub-scales of the Product Scale: explicitly stated goals, accomplishment of stated goals, substantive and comprehensive recommendations, and creative ideas. The three committees with "poor" written curriculum products were generally rated very low on these same sub-scales; in some cases, there was no evidence of any substantive committee output.

The relationship between the quality of group process and the quality of group product was determined through the procedure of rank-order correlation; both the Spearman rho and the Kendall tau coefficients of correlation were computed. Results appear in Table 5. As can be observed from Table 5, the correlation coefficients obtained from each of these procedures were significant ($p < .01$), indicating that there are adequate grounds for stating that an association exists between the rankings; i.e., that a positive relationship exists between the group processes and the written products produced by the curriculum committees.

Table 1

Total Group Process Scores and Committee Rank by Process[a]

Committee	Total Group Process Score	Process Rank
Language Arts	4.10	7
Mathematics	4.57	4
Science-Social Studies	1.63	10
Health, Safety, P.E.	1.53	11
Music	4.78	3
Elective Areas	3.85	8
Art	1.99	9
Library and Media	5.20	2
Kindergarten	5.53	1
Student Evaluation	4.33	6
Certified Staff Evaluation	4.45	5

[a]Process scores are based on a scale ranging from 1 to 7 points.

Table 2

Quality of Group Processes and Operations Based on Total Process Scores

Excellent Group Processes (Range = 7-5)[a]	Average Group Processes (Range = 4.9-3)	Poor Group Processes (Range = 2.9-1)
Kindergarten	Music	Art
Library and Media	Mathematics	Science/Social Studies
	Certified Staff Evaluation	Health, Safety, and P.E.
	Student Evaluation	
	Language Arts	
	Elective Areas	

[a]Process scores are derived from a scale ranging from 1 to 7 points.

Table 3

Total Product Scores and Committee Rank by Product[a]

Committee	Total Product Score	Product Rank
Language Arts	5.10	5
Mathematics	4.80	6
Science-Social Studies	1.78	10
Health, Safety, P.E.	2.73	9
Music	3.93	8
Elective Areas	4.15	7
Art	1.00	11
Library and Media	5.53	3
Kindergarten	6.09	2
Student Evaluation	5.42	4
Certified Staff Evaluation	6.13	1

[a]Product scores are based on a scale ranging from 1 to 7 points.

Table 4

Quality of Curriculum Products Based on Total Product Scores

Excellent Products (Range = 7-5)[a]	Average Products (Range = 4.9-3)	Poor Products (Range = 2.9-1)
Certified Staff Evaluation	Mathematics	Health, Safety, and P.E.
Kindergarten	Elective Areas	Science-Social Studies
Library and Media	Music	Art
Student Evaluation		
Language Arts		

[a]Product scores are derived from a scale ranging from 1 to 7 points.

Table 5

Rank-Order Correlation of Process with Product

	Spearman Correlation Coefficient (ρ)	Kendall Correlation Coefficient (τ)
Process with Product	.71[a]	.53[a]

[a] $p < .01$

Table 6

Source Table for the One-Way Analysis of Variance of CAI 74 by Committee Participation in 1974-75

Source of Variation	D.F.	Sum of Squares	Mean Squares	F Ratio
Between Groups	1	955.99	955.99	3.03[a]
Within Groups	99	31196.82	315.12	
Total	100	32152.81		

[a] $p > .05$

Table 7

Source Table for the One-Way Analysis of Variance of CAI 75 by Committee Participation in 1974-75

Source of Variation	D.F.	Sum of Squares	Mean Squares	F Ratio
Between Groups	1	2614.14	2614.14	8.99[a]
Within Groups	99	28787.16	290.78	
Total	100	31401.31		

[a] $p < .01$

Teachers' attitudes toward curriculum issues were measured by the Curriculum Attitude Inventory (CAI); attitudes of committee participants and non-participants were analyzed through analysis of variance and analysis of covariance procedures.

A one-way analysis of variance was performed on both the 1974 and 1975 CAI scores, using curriculum committee participation in the 1974-75 school year as the independent variable. Table 6 presents a source table for the 1974 CAI; and Table 7 shows a source table for the 1975 CAI. Since the F ratio obtained on the 1974 CAI was not significant, it can be concluded that there were no significant differences in the attitudes of those teachers who chose to participate on 1974-75 curriculum committees, and those who chose not to participate, prior to the time that the committees began their work. However, since the F ratio obtained on the 1975 CAI was significant ($p < .01$), it can be concluded that significant differences in teacher attitudes toward curriculum issues existed between committee participants and non-participants at the time that the curriculum committees were completing their work.

The results obtained through the one-way analysis of variance procedures must, however, be interpreted with caution as the samples utilized in the analysis were neither randomly selected nor randomly assigned to groups. It should be noted, however, that while the 1975 CAI scores of the participant group were significantly different from those of the non-participant group, growth in a negative direction was observed for both of these groups on the CAI from 1974 to 1975.

In order to more closely analyze the difference in teacher attitudes toward curriculum issues after participation (or non-participation) on a curriculum committee in 1974-75, the more sensitive statistical procedure of analysis of covariance was also undertaken with this same data (CAI 74 and CAI 75). This procedure was employed since it has been found useful for studying groups "as they are"; i.e., when subjects cannot be matched or assigned at random, as was the case in the present study. The covariate employed in the present study was the CAI 74, the dependent variable was the CAI 75, and the independent variable (or "treatment") was committee participation. The CAI 74, therefore, served as a pretest measure, where differences existing between the attitudes of participants and non-participants prior to the 1974-75 school year were "adjusted" for on the final measure, the CAI 75. Table 8 presents the source table for the analysis of covariance.

Table 8

Source Table for the Analysis of Covariance of the CAI 75 by Committee Participation with the CAI 74 as Covariate

Source of Variation	D.F.	Sum of Squares	Mean Squares	F Ratio
Covariate (CAI 74)	1	12637.38	12637.38	69.87[a]
Main Effects (Committee Participation)	1	1038.59	1038.59	5.74[b]
Residual	98	17725.325	180.87	
Total	100	31401.31	314.013	

[a] $p < .001$

[b] $p < .05$

The first F ratio of 69.87 was highly significant ($p < .001$), and indicated that a significant correlative relationship existed between the CAI 74 and the CAI 75, and that any variation found in the CAI 75 cannot be attributed to the influence of the CAI 74, but rather would be explained by differences in treatment. The second F ratio of 5.74 was also significant ($p < .05$), indicating that after adjustments were made for any initial differences in the data, that significant differences were found to exist between the two groups. Committee participation in 1974-75, therefore, significantly affected teachers' attitudes toward curriculum use and planning. Those teachers who participated in curriculum planning in 1974-75 had a higher mean on the CAI 75 than those teachers who did not participate; this change held even after adjustment for the differences existing in the covariate (CAI 74) were made.

As was the case in interpreting the results of the analysis of variance, the results of the analysis of covariance must also be interpreted with caution. Although this procedure does not require that subjects be matched or assigned randomly to groups (since the procedure of covariance "adjusts" for these initial differences), the procedure does assume the random assignment of treatments to the groups. As the decision of whether or not to participate in curriculum planning in 1974-75 was made by the teachers themselves, the higher CAI means (both on the pretest and posttest measure) of the teachers who participated in curriculum planning comes as no surprise. In fact, it would appear logical that those teachers who initially had "better" or more positive attitudes toward curriculum planning would also be those who would voluntarily choose to work on this activity again.

At any rate, even with the limitations discussed above, the results of both the analysis of variance and the analysis of covariance procedures undertaken support the conclusion that differences in attitudes toward curriculum issues were found to exist between those teachers who participated on curriculum planning committees in 1974-75, and those who did not participate.

Since it was observed that the means of both the participant and the non-participant group on the CAI indicated a negative growth from 1974 to 1975, t-tests were performed to test the significance of this negative growth. Three such t-tests were performed on the 1974 and 1975 CAI means of the following: 1) on the committee participant group; 2) on the non-participant group; and 3) on the total group. Table 9 displays the mean scores, the standard deviations, and the mean differences for these three groups on the CAI. It can be noted from Table 9 that none of the negative growth scores were

statistically significant. Therefore, it can be concluded that there was no positive change or growth in teacher attitudes toward curriculum issues, as a result of curriculum committee participation in 1974-75. Furthermore, the negative growth which was observed was not statistically significant.

Table 9

Means, Standard Deviations, and Mean Differences on the CAI for 1974 and 1975

	1974			1975			
	N_1	M_1	SD_1	N_2	M_2	SD_2	$M_2 - M_1$
1974-75 Committee Participants	43	192.33	16.83	43	191.65	16.60	- .68
1974-75 Non-Participants	58	186.10	18.40	58	181.36	17.38	-4.74
Total	101	188.75	17.93	101	185.74	17.72	-3.01

$p > .05$

The third output variable of the curriculum appraisal model (see Figure 2), member satisfaction with 1974-75 committee participation, was indirectly observed from the opinions expressed by the committee members on this topic in their interviews. Generally speaking, those committees whose members expressed a high degree of satisfaction with committee participation were also those groups that demonstrated either excellent or average group processes. Likewise, in the three committees which exhibited poor group processes and operations, much dissatisfaction towards 1974-75 curriculum committee participation was expressed by the members. In a broad sense, therefore, a relationship can be said to exist between the quality of group processes exhibited and the intangible "product" of member satisfaction with committee work.

To summarize; the findings of the study supported the following conclusions: 1) a relationship existed between the quality of group processes demonstrated by curriculum committees and the quality of the written products produced by them; 2) quality of group process was related to the degree of satisfaction with committee participation and committee performance expressed by the participants; and 3) committee participation led to significant differences between the curriculum attitudes of participants and non-participants of curriculum planning committees.

Since the primary intent of this study was to investigate the possible factors contributing to an observed drop in the attitudinal measures of teachers in the school district toward curriculum planning from 1974 to 1975, the following implications and recommendations based on the data analyzed were formulated:

1) The entire curriculum system appears to suffer from a lack of purpose or direction; many of the committees did not understand what their tasks and goals were to be; some committees dealt only with the evaluation aspect of curriculum planning. Therefore, any future curriculum planning activities in the district should build curriculum evaluation into the curriculum engineering system, so that evaluation becomes an integral part of curriculum planning, and not a separate, unrelated process. Such evaluation procedures should be installed simultaneously with curriculum planning procedures, and should attempt to continuously evaluate both the processes and the products of the curriculum system.
2) Curriculum planning in the school district needs to be rejuvenated; a new impetus and a new direction is needed if the curriculum system

is to continue to function and to be effective. Curriculum planning in the district needs to once more become a planned, deliberate affair, as it was when it was required of all teachers. Furthermore, teachers working on curriculum planning will need new system inputs, in the form of new ideas and new ways to look at curriculum content. The aid of subject area consultants could be sought in this effort.

3) Attitudes expressed by teachers indicated that a lack of trust exists between teachers and administrators in regard to curriculum planning, implementation, and evaluation. Greater administrative leadership needs to be exerted in this direction. Specifically, in order to improve teacher attitudes and teacher performance within the curriculum system, teachers somehow need to feel that their concerns are legitimate, that they will be listened to, and that some of their curriculum suggestions and recommendations will be implemented, rather than lost or ignored by the administration.

To summarize, an all-out effort to rejuvenate and revitalize the presently disintegrating curriculum system in the district can serve as a means to improve teacher attitudes, to improve teacher-administrator communication and relationships, and to improve curriculum and instruction in the school district. The present study was intended to serve as a model for this type of curriculum and evaluation research.

FOOTNOTES

[1]Ralph M. Stogdill, Individual Behavior and Group Achievement (New York: Oxford University Press, 1959).

[2]George A. Beauchamp, Curriculum Theory, 3rd ed. (Wilmette, Ill.: The Kagg Press, 1975).

[3]Michael Langenbach, "The Development of an Instrument to Measure Teachers' Attitudes Toward Curriculum Use and Planning" (Ph.D. dissertation, Northwestern University, 1969).

APPENDIX A

Stogdill's Structure of a Theory of Organization Achievement

(Adapted by permission from Ralph M. Stogdill, Individual Behavior and Group Achievement (New York: Oxford University Press, 1959), p. 13).

MEMBER INPUTS	MEDIATING VARIABLES		GROUP OUTPUTS
Behaviors	Formal Structure	Role Structure	Achievement
Performances	Function	Responsibility	Productivity
Interactions	Status	Authority	Morale
Expectations	(Purpose, Norms)	(Operations)	Integration
	Group Structure and Operations		Effects

APPENDIX B

Beauchamp's Model of a Curriculum System

(Adapted by permission from George A. Beauchamp, Curriculum Theory, 3rd ed. (Wilmette, Ill.: The Kagg Press, 1975), p. 140).

INPUT	CONTENT AND PROCESSES FOR SYSTEM MAINTENANCE	OUTPUT
Educational foundations	Choice of arena for curriculum processes	A curriculum
Community characteristics	Selection of personnel	Increased knowledge by participants
Personalities of persons involved	Selection and execution of working procedures for: determining curricular goals selection of curriculum design planning and writing	Changed attitudes
Curriculum experience	Establishing implementation procedures	Commitment to act
The subject matters from disciplines and other subjects	Establishing procedures for appraising and revising the curriculum	
Social and cultural values		